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# **Organizational and Communication Realities in Subcontract Management**

**Defense Systems Management School**

**May 1975**

# DEFENSE SYSTEMS MANAGEMENT SCHOOL



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## PROGRAM MANAGEMENT COURSE INDIVIDUAL STUDY PROGRAM

ORGANIZATIONAL AND COMMUNICATION  
REALITIES IN SUBCONTRACT MANAGEMENT

STUDY PROJECT REPORT  
PMC 75-1

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# DEFENSE SYSTEMS MANAGEMENT SCHOOL

## STUDY TITLE:

### ORGANIZATIONAL AND COMMUNICATIONS REALITIES IN SUBCONTRACT MANAGEMENT

## STUDY PROJECT GOALS:

To summarize the activities that have occurred in the area of Air Force Subcontract Management over the past three years.

To identify and define the acquisition management system interfaces that are required in the subcontract management arena.

## STUDY REPORT ABSTRACT

The purpose of this study project was to summarize the activities that have occurred in the realm of Air Force Subcontract Management over the past three years. This study indicates what has been and is to be accomplished in the arena of subcontract communications and control.

The study was carried out through extensive research with the Air Force Systems Command, the Air Force Contract Management Division (AFSC) and interviews with personnel in OSD and Air Staff positions.

Conclusions drawn from the study include:

- (1) Subcontracting is big business and is likely to get bigger, thus stretching the communication channels.
- (2) Since 1972 there has been considerable high level emphasis placed on Air Force subcontracting and management.
- (3) Policy changes, originally stated in the form of guidance, are beginning to appear as ASPR changes and ASPR supplements, opening up communication channels.
- (4) Recent Air Force contract emphasis does reflect the policy guidance that has been issued since 1972. Subcontracting and subcontractors are beginning to receive much needed visibility.

Recommendations include:

- (1) The author fully supports the pending changes to ASPR, as well as the pending AFSC ASPR Supplement and the AFSCMD (AFSC) ASPR Supplements discussed in Chapter III.
- (2) The System Program Office must take the lead in formulating a "team" concept that extends to the prime and his subs as well as the government contract administration offices.

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KEY WORDS

ORGANIZATION ANALYSIS

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# ORGANIZATIONAL AND COMMUNICATION REALITIES IN SUBCONTRACT MANAGEMENT

Study Project Report  
Individual Study Program

Defense Systems Management School

Program Management Course

Class 75-1

by

Kenneth JuVerte  
Major USF

May 1975

Study Project Advisor  
Mr. Albert E. Moore

This study project report represents the views, conclusions and recommendations of the author and does not necessarily reflect the official opinion of the Defense Systems Management School or the Department of Defense.

## EXECUTIVE SUMMARY

The purpose of this study project was to summarize the activities that have occurred in the realm of Air Force Subcontract Management and Communicators over the past three years. Heavy emphasis on Subcontract Management has been placed on the Air Force procuring activities. This study indicates what has been and is to be accomplished in the arena of subcontract communications and control.

The scope of this study is important to the Air Force as well as other service components. With over half of our scarce procurement dollars going to subcontractors, it is essential for all acquisition activities to understand steps that have been taken and those that are being taken to bring this large activity into a credible organizational and communications loop.

The government can influence the provisions and management of subcontracts, but in the final analysis, the subcontract is the legal link between the prime and the sub with the government observing from the sidelines. The prime contractor is paid for his efforts to manage subcontractors, and the relationship between the two is expected and recognized. However, it behooves the government to exercise its indirect influence to the maximum extent if total system management is to be effective and beneficial. This can be accomplished through the terms of the prime contract and through the surveillance of the contractor's subcontract program.

The System Program Office is organized and operated to carry out its responsibility for overall management of a weapon system acquisition program. The contract this office executes activates the relationships among the SPO, the prime contractor, the subcontractor and the government contract administration services.



### ACKNOWLEDGEMENTS

I would like to express my appreciation to those individuals who gave so freely of their time so that study could be written. A partial list is included in the Bibliography of this study. I would also like to thank the faculty of the Defense Systems Management School for their support and guidance; Mrs. Ruth Feltner for her editing and typing of this report and my wife Dea and children Scott and Julie for their patience and understanding.

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## CHAPTER I

### INTRODUCTION

Subcontracting is becoming increasingly important in government procurement. With fewer and more expensive major weapon system acquisitions, the government is specifying contracts that require a large portion of the work be subcontracted. In 1970, an estimated 50 cents of every 1000 prime contract dollar went to subcontractors.<sup>1</sup> Other estimates range as high as 70 cents on the dollar. With the large number of contract dollars, it follows that there also will be a large number of subcontractors. The government in most cases has not elected to go into third party contractual relationships, but has tasked the prime contractor to manage subcontractors supporting a given prime contract.

While the prime contractor is the manager of all subcontracts, the government has developed numerous requirements which impact directly on the subcontractor. These range from socio-economic objectives to technical specifications and accounting procedures. Usually these requirements are stated in the prime contract which specifies that the provisions "flow down" in any subsequent subcontract. When a subcontractor enters into a subcontract he agrees to adhere to these requirements. Despite the many government requirements laid on a subcontractor, he has little direct access to the government. The subcontractor has no privacy or legal relationship with the government. By and large government subcontractor interaction takes place through the prime contractor.

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<sup>1</sup> US Comptroller General Report B-169434, Need to Improve Effectiveness of Contractor Procurement System Reviews, 18 Aug 1970. p 4.

Since there was no privity of contract between the government and the subcontractor, communication with these important links in the weapon acquisition process was often neglected. The past has taught us that when these important communications links were neglected, the result was all too often increased costs, slipped schedules and degraded performance.

## Background

The declining defense budget as a percentage of GNP is placing even greater demands on government managers to make effective and efficient procurements. Subcontracting costs make up a substantial part of the "price" of every procurement of major weapon systems. Recognizing that subcontracting is defined to be all procurement awards made by a prime contractor in the course of his performance under a contract, it is of utter importance that the government have adequate knowledge of events occurring at the subcontractors level.

In the interest of focusing attention on the subcontracting aspects of Air Force systems procurements, it is necessary to describe the relationships among the System Program Offices (SPO), the prime contractors, the Contract Administration Services and the subcontractors. The interplay among these important actions determines to a large degree, the success or failure of a weapon system procurement. This interplay is guided by the contract documents.

To permit an understanding of the more important terms, the author has included several definitions taken from DOD directives and regulations.

1. Major Program: Programs designated by the Secretary of Defense/Deputy Secretary of Defense having (a) an estimated RDT&E cost in excess of \$50 million; or (b) an estimated production cost in excess of \$200 million; or (c) national urgency; or (d) recommendations by DOD Component Heads or Office of Secretary of Defense (OSD) officials.<sup>2</sup>

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<sup>2</sup> Department of Defense Directive 5000.1, 13 July 1971, Acquisition of Major Weapon Systems, p. 1.

2. Program Manager: The generic term used to denote the single Air Force manager (System Program Director, Program/Project Manager, or System/Item Manager) during any specific phase of the acquisition life cycle.<sup>3</sup>

3. Program Office (PO): The field office organized by the Program Manager to assist him in accomplishing the program tasks.<sup>4</sup>

4. Contract Administration Office: The office which performs assigned functions related to the administration of contracts, and assigned pre-award functions.<sup>5</sup>

5. Purchasing Office: The office which awards or executes a contract for supplies or services and performs post-award functions not assigned to a contract administration office.<sup>6</sup>

In 1972 there was a tremendous rebirth of interest in the subcontract area, particularly within the Air Force. General Brown commenting on a then recently completed Air Force Systems Command Study had the following to say:

The recently completed AFSC subcontract study noted several areas in which significant progress is being made in our surveillance of prime contractor management of subcontractors. Some of our SPO/AFPRO/DCAS teams, for example, are achieving improved visibility into the subcontract structure. With subcontracted work representing such a large element of any weapon system program, it is of great importance that a proper degree of our attention and influence be so directed.<sup>7</sup>

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<sup>3</sup> Air Force Regulation 800-2, Program Management, Department of the Air Force, Washington, DC, 16 March 1972, p. 4.

<sup>4</sup> *ibid*, p. 5.

<sup>5</sup> Armed Services Procurement Regulation, Department of Defense, Washington, DC, 1974, p. 1.201.25.

<sup>6</sup> *ibid*, p. 1.201.24.

<sup>7</sup> Air Force Systems Command Policy Letter, Subcontractor Surveillance, 27 April 1972.

An attachment containing command policy was included with General Brown's letters which I will further quote from:

1. Management of subcontractors is the responsibility of the prime contractor.
2. Require prime contractors proposing on major systems to submit a make-or-buy plan.
3. During source selection, consider the prime contractor's past success in managing the efforts of his subs.
4. Identify critical subcontractors for special management emphasis.
5. For new acquisition programs, contractually define the subcontractor management responsibility of the prime contractor.
6. Review the prime contractor's selection of critical subcontractors.
7. Encourage prime contractors to solicit from subcontractors risk analyses and alternate technical proposals and proposals for off-the-shelf hardware as a means of achieving practical tradeoffs.
8. Fix responsibility in program offices and AFPRO's for surveillance of critical subcontractor performance.
9. Maintain a visibility into the prime contractor's flow down of government technical requirements.
10. Require periodic reports from the prime contractor on subcontractor performance.
11. Visit critical subcontractors frequently.<sup>8</sup>

Progress in implementing this command policy will be discussed in following chapters.

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<sup>8</sup> Air Force Systems Command Policy Letter, Subcontractor Surveillance, 27 April 1972.

Later in 1972 the Commission on Government Procurement had additional comments to make on subcontracting:

Our recommendation to establish a system of Government-wide coordinated procurement regulations would provide the mechanism and authority for:

Obtaining clarity and consistency in the requirements for clauses and obligations to subcontractors.

Standardizing and establishing consistent requirements for the revision and approval of subcontracts.

Providing consistent application of cost principles and the cost and pricing data requirements of the truth in Negotiations Act.<sup>9</sup>

The aforementioned studies and policy guidance touched off a series of lower level studies aimed at addressing the area of subcontracting. The results of selected studies will be addressed in Chapters II and III.

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<sup>9</sup> Report of the Commission on Government Procurement, Vol I, Washington, DC, December 1972.



## Scope

The primary objective of this study is to describe the complex communication difficulties that prevail in the management and control of subcontractors. The overall responsibility for this task lies in the System Program Office (SPO). From the SPO these communication patterns follow parallel paths, one path contractor and one path government. These communication channels become extended as the prime contractor engages subcontractors who in turn may engage additional subcontractors. The Government has the responsibility to extend its communications loop in the areas that are deemed critical to the program. This study will be addressing how these channels have been extended and will be expanded in order to obtain this vital information.

## CHAPTER II

### INHERENT DIFFICULTIES IN THE SUBCONTRACT COMMUNICATIONS PROCESS

The communication process for critical subcontracts is a difficult arrangement. Communication between the SPO and the prime contractor can itself be a difficult process. If we add in the numerous subcontractors that are on large programs, we can easily see the magnification of the problem. Figure 1 shows how fast interfaces can build up on a program that has a number of critical subcontractors. Note that in Figure 1 there is only one prime contractor shown (on many of the large Air Force airplane programs for example, there are prime contracts on both airframe and engine). In addition, separate subcontracts were not broken out, but consolidated.

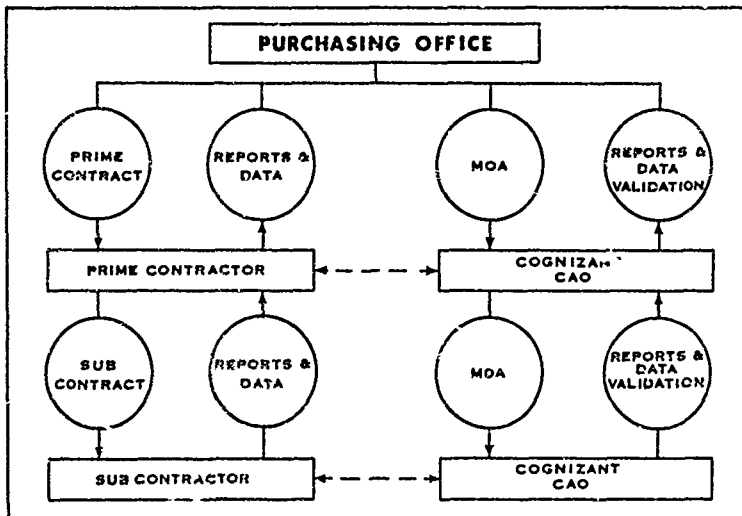


Fig 1.

## Communication Difficulties

It is evident that the SPO faces a very large communication net. It is also very important that communication be meaningful. In one of Peter F. Drucker's latest books he espoused the following:

Communication, in other words, always makes demands. It always demands that the recipient become somebody, do something, believe something. It always appeals to motivation. If, in other words communications fits in with the aspirations, the values, the purposes of the recipient, it is powerful. If it goes against his aspirations, his values, his motivations, it is likely not to be received at all or, at best, to be resisted ... By and large, therefore, there is no communication unless the message can key into the recipient's own values, at least to some degree.<sup>10</sup>

Mr. Drucker has other relevant remarks on the information that is to be communicated:

Indeed, information is, above all, a principle of economy. The fewer data needed, the better the information. And an overload of information, that is, anything much beyond what is truly needed, leads to information blackout. It does not enrich but impoverishes.

Information activities present a special organizational problem. In the term the chemist uses they are "bi-valent"; they have two faces, two dimensions; and require two different "bonds." Unlike most other result-producing activities, they are not concerned with one stage of the process but with the entire process itself. This means that they have to be both centralized and decentralized.

There is, so far, no clear answer and no satisfactory way to organize information work - though it is clearly a key activity. Nobody has yet seen a total information system. No one may ever see one. But as we develop information capacity we will have to grapple

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<sup>10</sup> Drucker, Peter F. Management: Tasks, Responsibilities, Priorities, Harper & Row, 1974, pages 487, 488.

with the organizational problem and will have to find answers - or at least approaches.<sup>11</sup>

The above paragraphs were chosen to illustrate the fine lines that we're attempting to walk when we extend our interest into the subcontract area. Yet the area is so vital to the program that it cannot be ignored.

#### State of the Subcontract World

Before addressing the organizational problem, it is important that we consider the state of the subcontract world as it appeared in 1974. The Air Force Contract Management Division response to a Logistics Management Institute request is the basis for this evaluation. The AFCHD has been working the subcontract area hard over the past couple of years and on a more limited basis for at least fifteen years. The analysis that follows is in all likelihood a fair appraisal of the subcontract arena. An outline approach will be followed.

#### A. Responsibilities for Administration of Major Subcontracts

##### 1. Government:

- a. There is no contractual relationship between the Government and a subcontractor.
- b. The Government does have the responsibility of assuring that the prime contractor properly administers all procurement actions.

##### 2. Prime Contractor:

- a. The prime has the obligation for total performance as outlined in the terms and conditions of the prime contract.

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<sup>11</sup> Drucker, Peter F. Management: Tasks, Responsibilities, Priorities, Harper & Row, 1974, pages 538 & 539

- b. Since the prime has total responsibility for delivery of an acceptable end item, he should administer all purchase documents to the extent necessary to preclude or minimize impact on prime contract cost, schedule and technical performance.

B. Prime Contractors' View of Their Responsibilities for Subcontract Management

Our experience indicates that primes have not given much thought to subcontract management. Every major program that gets in trouble can identify one or more major subcontracts as a principal contributor to the problem.

The tendency is to depend on subcontractor reports once the purchase document is issued. There is inadequate verification of reporting accuracy, and when the subcontractor chooses to conceal problems, the prime ends up with an unpleasant surprise and a costly work around.

C. Prime's Administration of Subcontracts and Roles of DOD Organizations

1. Prime Contractor:

- a. As stated before, reports are the common medium to exercise subcontract management.
  - b. Once a problem reaches crisis proportions, overkill occurs and contributes to major cost increases.

2. Government Program Offices:

Strictly speaking, program offices do not have a role in subcontract management. They do have an

interest in subcontractor problems which will impact program cost, schedule or technical performance of the prime contract.

3. Contract Administration Offices (CAO):

- a. The general role of CAOs is through the Contractor Procurement System Review (CPSR) Program. This calls for a periodic system review and continuing system surveillance.
- b. The services have implemented the CPSR Program differently. The contractors have left policing of the system to the Government.

D. Extent to Which Prime Contractors and Interested DOD Organizations Keep Apprised of Major Sub's Cost, Schedule and Performance Problems and Nature of Correcting Actions

1. Prime Contractors: Most primes follow DODD 5020.1 on major program contracts to the extent of designating program managers. Their program managers establish program milestones which include milestones for subcontractor performance, such as PDRs, CDRs, key tests, etc., requiring prime participation. Unfortunately, production progress is seldom tracked except by subcontractor progress reports.
2. DOD Organizations: Statusing of subcontracts is not a government task. We should verify the prime has an adequate

management system in that area which includes  
advising interested parties of potential impact.<sup>12</sup>

The previous references from Mr. Drucker and the AFCMD were chosen to illustrate the magnitude of the communications task. The situation is difficult, but not bleak. There are numerous resources being applied to the task. Chapter III will discuss the application of these resources.

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<sup>12</sup> "Administration of Major Subcontracts" Unpublished Report, Air Force Contract Management Division, Kirtland AFB, NM, July 1974.

### CHAPTER III

#### CHANGES ARE OCCURRING TO CLOSE THE COMMUNICATIONS LOOP

Since 1972 a number of changes have been occurring in both policy and implementation affecting the subcontract communication process. Policy changes are occurring at the Office of the Secretary of Defense (OSD), the Air Force Systems Command (AFSC), and the AFSC Divisions. These changes are effecting the approaches that prime contractors and subcontractors are using in doing business with the government.

#### AFSC Study

The catalyst for the interest in subcontractors was General Brown's Subcontractor Policy Letter and the subsequent AFSC subcontract study. The results of the study were briefed to the:

- Air Force Systems Procurement Council
- Industry Advisory Committee, OSD
- Contract Administration Advisory Board, OSD
- Air Force Directorate of Procurement Policy Staff
- GEN Brown and AFSC Staff
- ASD, ESD, SAHSO, ADTC and AFSCMD
- AFSC Program Directors
- Air Force Audit Agency
- Naval Materiel Command
- Army Materiel Command Procurement Conference
- DOD Training Courses



## Industry

Aerospace Industries Association (AIA)

Electronic Industries Association (EIA)

Individual Contractors<sup>13</sup>

The overall message conveyed to those briefed was:

There was an unexpected use of firm fixed price subcontracts.

Current DOD acquisition policy has had little impact on prime/sub relationship.

Better surveillance of technical flowdown needed.

Primes given little guidance by Air Force on management of subs.

Prime's emphasis on subcontract management varies.

ASPR discourages Air Force surveillance of Prime/Sub relationship.

Air Force surveillance promotes more effective prime management of subs.<sup>14</sup>

The wide dissemination of the AFSC study, plus OSD interest, plus continuing overruns and subcontractor problems, caused a number of events to occur. In September 1972 the Space and Missile Systems Organization (SAMSO) (AFSC) developed a subcontract management clause. This clause has been used over the past two and one half years and found successful. This clause (plan) is commonly referred to as the SAMSO clause. A copy is shown as Appendix 1.

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<sup>13</sup> COL Joseph H. Connolly, Air Force Directorate of Procurement Policy, Washington, DC, Personal Interview, March 1975.

<sup>14</sup> "Air Force Systems Command Study", Unpublished Study, Headquarters, Air Force Systems Command, Andrews AFB, Washington, DC 1972.

## AFCMD Study and Results

During 1973 the AFCMD set up an exhaustive study as to how the headquarters and the 23 Air Force plants under their cognizance could improve their subcontract surveillance. A partial list of the conclusions of this study follows:

The recommended subcontract management organization also will synergize the government contract management responsibilities in the area of subcontracts. The present functional fragmentation of responsibilities of subcontract management will be united into one organization under a systems view. All of the tasks related to subcontract management will be centralized under a responsible director along with the necessary skills to accomplish the tasks.

This systems view of the management of subcontracts also has the advantage of being objective oriented. The system manager has the responsibility and the resources to carry out all the common objectives of proper subcontract management.

Therefore, the establishment of this organization will, for the first time, give assurance to the Commander, AFCMD, that his AFPROs have the necessary resources and organizational structure to exert a significant influence on the prime contractor's management of his subcontractors.<sup>15</sup>

This study was followed up with the formal establishment of a Directorate of Subcontract Management (SM) in March 1974. The Directorate's emphasis was twofold. Section 23 of ASPR<sup>16</sup> and the DOD Manual for

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<sup>15</sup> "Air Force Contract Management Division Study", Unpublished Study, Headquarters, Air Force Contract Management Division (AFSC), Kirtland AFB, NM, June 1973.

<sup>16</sup> Armed Service Procurement Regulation, Department of Defense, Washington, DC, 1973, 1974.

Contractor Procurement System Reviews<sup>17</sup> set forth the policies and procedures for the evaluation, review, and consent to or approval of contractors' procurement systems. The guidance in ASPR and the DOD Manual was folded into the AFCMD Contractor Management System Evaluation Program.

The second task was the manning of the Headquarters Directorate and the Divisions at the AFPROs. The functional skills needed and utilized consisted of Industrial Engineers, Contract Specialists, Quality Assurance Specialists and Systems Engineers. Depending on an AFPRO's size and programs it may not have all the disciplines in the Subcontract Management Division.

The evaluation process consists of four primary areas covering the prime Contractors Acquisition System. They are:

1. Prime Contractor Organizational Management.

i.e. Corporate Policy, Assigned Roles, Delegated Authority, Organizational Placement, Management Visibility, and Internal Audit.

2. Evaluation of Acquisition Planning:

Design - Design Review - Drawings and Specifications - Make-or-Buy - Potential Sources - Quantifying - Processing the Purchase Request - Second Source Program - Critical Subcontracts.

3. Evaluation of Purchasing Process:

Obtaining Competition - Preaward Surveys - Compliance with PL87-653 - Pricing - Negotiation - Purchase Documents.

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<sup>17</sup> Department of Defense, DOD Manual for Contractor Procurement System Reviews, Office of the Assistant Secretary of Defense (Installations and Logistics) January 1973.

#### 4. Evaluation of Postaward Management of Subcontractors.

Visibility and Control - Configuration Management -  
Contractor Source Inspection - Problem Prevention,  
Corrective Action.<sup>18</sup>

The effect of the thorough evaluation of the prime contractor's acquisition system is to force the prime to take a hard look at how he is managing his subcontracts. Deficiencies identified by the AFPRO SM Division are identified to the Air Force Plant Representative (AFPR) through the Contractor Management System Evaluation Program. The AFPR passes the Management System Indicators (MSI) to the company General Manager, effected SPO Program Manager and AFCMD. Due to the wide notification of interested parties, considerable emphasis is placed on correcting deficiencies.

To formalize the AFCMD Subcontract Management System, the command elected to supplement ASPR and the Armed Services Procurement Supplement (ASPS). There are ten paragraph supplements to ASPR and seven paragraph supplements to ASPS. It is not the intent of this paper to look at all the supplements. However, the following example is representative of the supplements.

23-101(c) AFPRO Subcontract Management personnel will continually evaluate and influence the prime contractor's management of subcontracts and purchase orders and advise the ACO of the findings and recommendations for system improvement. An evaluation summary with findings and recommendations will be furnished the ACO annually. A special summary will be forwarded immediately upon identification of a deficiency which could

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<sup>18</sup> Air Force Contract Management Division Regulation, XX-X(Draft), Headquarters, Air Force Contract Management Division (AFSC) Kirtland AFB, NM, 15 Sep 1974.

warrant withdrawing approval. The basic tool to accomplish the evaluation task shall be the Management System Indicators (MSIs) defined in the AFSCMD Contractor Management System Evaluation Program established by AFSCMDR 178-1, 19 April 1974.<sup>19</sup>

The AFSCMD has moved out smartly in the Subcontract Management area. The author is not trying to convey that everything is moving smoothly. There are difficulties in both new approach and personnel. However, the command recognized a severe limitation in its subcontract administration area and has taken positive steps to correct this deficiency.

#### Formalization of AFSC Policy Guidance

The next area I would like to address is the steps being taken to formalize the policy guidance first issued by General Brown in 1972.<sup>20</sup> This formalization is coming in the form of AFSC supplements to ASPR.<sup>21</sup> Although the supplements are still in draft form, there is much to gain in examining the draft supplements. It is likely the released version will not vary significantly from the drafts.

The AFSC supplement is being addressed under Section 23-5000 which does not have a counterpart in the 1974 edition of ASPR. The final coordination draft AFSC ASPR begins with:

23-5000. This part sets forth the policy to be followed with regard to surveillance by the Government of a prime contractor's subcontract management system acquisitions by AFSC purchasing offices.<sup>22</sup>

<sup>19</sup> HQ AFSCMD ASPR Supplement 4, 25 June 1974.

<sup>20</sup> Air Force Systems Command Policy Ltr, Subcontractor Surveillance, 27 Apr 72.

<sup>21</sup> LTC Joseph Kirk, Air Force Systems Command, Chief, Contract Administration, Personal Interviews, February-March 1975.

<sup>22</sup> AFSC ASPR Supplement (Draft), 18 Apr 75.

The scope addresses both the contract administration and the purchasing offices and contract administration under AFSC cognizance.

Section 23-5001 lays out the objectives:

23-5001. INTRODUCTION - The purpose of this part is to assure the prime contractor is managing his subcontract structure in the most efficient and effective manner practicable in support of overall program objectives and priorities. This part recognizes and is based on the following concepts:

a. A prime contractor has essentially two ways of obtaining supplies and services needed to manufacture contract end items: By production orders (internal acquisition) and by purchase orders (external acquisition).

b. Prime contractors do not just buy commodities; rather, they buy research, development, engineering, production, financial, and industrial capabilities.

c. In purchasing these additional capabilities, the prime contractor's objective should be to obtain not only additional capabilities, but also the control necessary to assure the success of the total production process and, thereby, the success of the end product.

d. As such, the prime contractor (and the purchasing office) must be as concerned with and knowledgeable of the status, progress, problems, and so forth of supplies and services externally acquired as it is of internally acquired items.

e. It is, therefore, incumbent upon everyone involved in the acquisition process to look upon the prime contractor and his subcontractors not as isolated, independent agents, but as essential elements comprising a total production process - an organic whole.

The objectives are very well stated. Of particular importance is paragraph 23-5001 c. The purchase of control necessary to assure the success of the end product is a very needed approach. This establishes a goal for both the prime and government to work for.

In discussing the definition of critical/high risk subcontracts, the supplement points out that flexibility and judgment will be required. Program development is far from static. Consequently, throughout the life of an individual prime contract, the enumeration of critical/high risk subcontracts will change as problems are identified and solved; milestone schedules are passed; and tests are completed.

In discussing policy, the supplement is very direct in that the government does not want to take over management of subcontractors.

23-5003. POLICY - Management of subcontractors is the responsibility of the prime contractor. It is the responsibility of AFSC purchasing offices and the cognizant contract administration organization to assure that the prime contractor efficiently and effectively carries out his contractual obligations.

The supplement continues by laying out the "how" to implement the policy that the prime contractor efficiently and effectively carries out his contractual obligations.

23-5004. PROCEDURES - In order to accomplish this, the following actions will be taken:

a. by the purchasing office:

(1) Evaluate, with the assistance of the contract administration office, the prime contractor's ability to manage his subcontracted work effort. (See AFSCR 70-9, para 5; AFR 70-15, para 5.q.; AFM 70-6, para 2-5a., and especially para 2-10 for guidance on source selection data.)

(2) Identify critical/high risk subcontract efforts during source selection. This identification should normally be part of the make-or-buy program review (Sec. III, Part 9).

(3) Consider the prime contractor(s') success in managing subcontracted work effort. In any new program with significant subcontracting effort, in order to accomplish this, evaluation(s) required by subparagraph (1) above shall be completed in sufficient time for use during source selection evaluation. If subcontract management is deemed a critical evaluation factor for award, this fact should be made clear to potential offerors in the evaluation criteria set forth in the solicitation. (This may include an AF evaluation of previous subcontract management experience with the offeror and/or present capabilities in the subcontract management area.)

(4) If appropriate, contractually define the subcontract management responsibility of the prime contractor including any special surveillance/reporting requirements.

(5) Continually evaluate critical/high risk subcontracted effort for special management emphasis throughout the contract management cycle. The exact manner, form, and depth of this evaluation with respect to specific subcontracts will be subject to negotiation between the purchasing office and the AFPRO and will be covered in the written Memorandum of Agreement executed by the Program Office and the AFPRO. Purchasing offices will maintain close and continuous coordination with the AFPRO in order to accomplish this evaluation.

b. by the Air Force Plant Representative Office (AFPRO):

(1) Respond to the purchasing office's request for assistance in critically evaluating the prime contractor's ability to manage his subcontracted work effort.

(2) Maintain continuous surveillance of the prime contractor's subcontract management system.

(3) Use supporting contract administration (ASPR 20-704) in carrying out this surveillance function, when necessary. In this event, specific surveillance details must be negotiated and made a part of a written delegation of authority/Memorandum of Agreement between the AFPRO and the subcontractor's cognizant contract administration office.



(4) Maintain close and continuing coordination with the purchasing office, keeping them informed on an exception basis of the prime contractor's subcontract management deficiencies. This includes keeping the purchasing office informed on a current basis of subcontract problems that may impact the program, including action(s) being taken by the contractor toward resolution.

Section 23-5005 discusses Evaluation. Since this section is consistent with the areas discussed under the AFCMD SM approach, further discussion will not be required. Appendix 2 contains a list of considerations in evaluating subcontracts.

Section 23-5006 discusses clauses that are suggested for major system acquisition. The two prime clauses are:

- (1) A Subcontract Management Plan (for inclusion in solicitations.)
- (2) Subcontract Management. (Sep 1972). (for inclusion in contracts.) This clause was discussed earlier in this chapter as the SAMSO clause. The clause has been modified.

The Subcontract Management Plan addresses the following areas:

- a. Special management emphasis on the part of the contractor will be applied in the identification and performance of critical subcontractors so as to provide assurance the contract requirements will be met.
- b. In response to the RFP, the offeror shall review his critical items, using his make or buy plan as a guide, identifying the high risk items planned to be subcontracted.
  - (1) List of critical items to be subcontracted;
  - (2) Brief description of procurement planning policies;
  - (3) Offerors service selection procedures;

- (4) Description of the program management organization which will implement and maintain surveillance over the critical subcontracts.

c. Prime contractor solicitations should encourage subcontractors to submit a risk analysis for each critical item.

d. The Subcontract Management Plan, as approved by the contracting officer, may be included in the contract by reference if deemed desirable to make it contractually binding.

The result of the AFSC supplement is to give considerable guidance to the Air Force's system acquisition process. The formalization of the policy guidance is a needed step in the overall acquisition system.

#### OSD Interest in Subcontract Management

The Office of the Secretary of Defense (OSD) has expressed considerable interest in the management of subcontractors.<sup>23</sup> This interest is being focused on changes to ASPR, particularly Section 23, Subcontracting Policies and Procedures. There are presently two cases (73-36, and 74-111) that could have significant impact on future changes to ASPR.

Case 73-36, "Contractor Management of Subcontracting", was presented by the Air Force after it ran several studies which have been previously discussed. The recommendation by the Air Force was:

Change and clarify ASPR to encourage appropriate flow down of DOD acquisition policy and facilitate

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<sup>23</sup> Mr. Dan Torres, Office of the Assistant Secretary of Defense, Installations and Logistics, Washington, DC, personal interview, March 1975.

sensible surveillance by the Government of the contractor's management of critical subcontractors on major defense systems acquisitions.<sup>24</sup>

This case has been temporarily tabled on several occasions pending settlement of the Garrett-McDonnell Douglas subcontracting case. Case 73-36 is now being actively pursued.

Case 74-111, "Thresholds for Review of Contractor Operations" contains recommendations to the Contractor Procurement System Review program. There are certain aspects of these cases that are being pursued concurrently.

A brief summary of the areas under consideration for change are:

CPSR Function

CPSR ASPR clause to permit Government review of procurement systems.

Guidance for Surveillance of Subcontracting Management.

Clause for Subcontract Management Plan

Recommendations

Provide a subcontracts clause to authorize the Government to perform CPSRs of any contractor meeting the criteria of ASPR XXIII.

In addition to the recommendations which are being considered by the Committee, ASPR 23-108, "Surveillance of Contractors with Approved Systems," should be reviewed and amended to focus on the evaluation of prime contractor's management of the entire acquisition process ... preaward through the post award phase.

That ASPR Committee in its consideration of Case 73-36 should include the Air Force "SAMSO" clause for the proposed changes to ASPR XXIII.<sup>25</sup>

The effect of the previously discussed changes is to open up a communication and control loop that had almost closed as a result of DOD acquisition policy during the 1960s. Chapter IV will discuss some of the results of the changing policy.

<sup>24</sup> Ltr, Subj: "Contract Management of Subcontracting", Dept of the Air Force, Washington, DC, 28 Nov 1973.

<sup>25</sup> Ltr, Subj: "Thresholds for Review of Contractor Operations", Office, ASD, Washington, DC, 26 Feb 1975.

## CHAPTER IV

### APPLICATION OF CHANGES AND EMPHASIS TO ASSURE BETTER COMMUNICATIONS AND MANAGEMENT

The previous chapter revealed some interesting observations on how the bureaucratic process was working on changing emphasis in the subcontracting arena. Once the AFSC policy was stated, lower tier organizations put new emphasis into the subject area, formalized what they were already doing, or both. Three years after the initial heavy emphasis by AFSC, formalized changes have not been issued by AFSC. Likewise, OSD has not yet changed ASPR.

This does not mean that little has been accomplished in the subcontract management area to date. This chapter will discuss changes that have occurred and are occurring to improve the subcontract communications process. The author has chosen to examine the AFCMD emphasis first because they were one of the first organizations to implement a new approach to subcontract management.

The AFCMD organizational approach to subcontract management is a key factor in improved subcontractor communications. The AFPROs are one of the key links in the communication process. Through the periodic evaluation of Management System Indicators, they are continually evaluating the contractors procurement system. Besides pressuring the prime to do a more effective job of procurement, a documented source of information becomes available for pre-award surveys, source selection, should cost studies and the like.

## AFSC PAR/CAR Briefings

In January 1975, the AFSC Commander began having selected AFPRs brief the status of Management System Indicators at their respective plants. The briefings occur as part of the Program Managers briefing of his program during Program Assessment Reviews (PARs) and Command Assessment Reviews (CARs). Subcontract Management is one of the specific areas discussed.

AFSCP 800-23 gives additional guidance as to what items to brief on Subcontractor surveillance. Figure 2 gives a rundown on the areas that the AFSC Commander may want to be briefed on.<sup>26</sup> The attention to subcontractors at the high levels forces the lower levels to become interested if they had not been previously.

### Cost/Schedule Systems Criteria

Another area of increasing information and communications is the Cost/Schedule Control Systems Criteria (C/SCSC). The C/SCSC policy is contained in DOD Instruction 7000.2, "Performance Measurement for Selected Acquisitions." This instruction's objective is to insure that DOD contractors use effective management control systems and procedures. The internal management control systems must provide data which: (1) indicate work progress; (2) properly relate cost, schedule and technical accomplishment; (3) are valid, timely and auditable, and (4) supply DOD managers with information at a practicable level of summarization.<sup>27</sup>

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<sup>26</sup> Air Force Systems Command Pamphlet 800-23, Secretary of the Air Force Program Review/Program Assessment Review/Command Assessment Review (SPR/PAR/CAR) Guidance, Andrews AFB, Washington, DC, 8 November 1974.

<sup>27</sup> Department of Defense Instruction 7000.2, "Performance Measurement for Selected Acquisitions", 25 April 1972, p. 1.

SUBCONTRACTOR SURVEILLANCE

LIST CRITICAL SUBCONTRACTORS

LOCATION

ITEM

DOLLAR VALUE

CONTRACT TYPE

VISITS BY PROGRAM OFFICE PERSONNEL

TO CRITICAL SUBCONTRACTORS/

DISPOSAL OF SURPLUS FACILITIES/

INDUSTRIAL PLANT EQUIPMENT PRODUCTION

READINESS REVIEWS

Fig. 2

Most of the large contractors and subcontractors have validated C/SCSC systems. However, not all defense contractors have validated C/SCSC systems. Mr. Michael Melburn writing in "The Federal Accountant" sums up how defense contractors feel about C/SCSC.

About 150 major Defense contractors have or are in the process of refining their management control systems to meet C/SCSC requirements. While there was some contractor resistance to C/SCSC initially, more and more contractors are becoming real advocates of the concept. Significantly, some have implemented C/SCSC to programs where application of the concept is not necessary to meet contractual requirements. Experience to date has shown the only real costs involved are in initially implementing the concept. Once implemented, the concept has demonstrated an overwhelming payoff in terms of the management overview it provides.<sup>28</sup>

Now that the base (larger numbers of contractors with validated systems) of C/SCSC is being expanded, it is becoming a more and more important tool in subcontract communication and control. DODI 7000.2 addresses subcontracts in the following manner:

Subcontracts within applicable programs ... may be selected for application of these criteria by mutual agreement between prime contractors and the contracting DOD component, according to the criticality of the subcontract to the program. Coverage of certain critical subcontracts may be directed by the DOD subject to the changes article of the contracts.<sup>29</sup>

Thus, depending upon the program, one may want to be certain that C/SCSC is passed down to critical subcontractors. The review of selected subcontractor's management systems may be performed by the procuring authority in coordination with the prime contractor.

<sup>28</sup> Melburn, Michael, "Toward Full Disclosure of Program Status", The Federal Accountant, March 1974, p. 8.

<sup>29</sup> DODI 7000.2

## MIL STD 1535A

The Air Force has made additional progress in the Subcontractor Quality Assurance area through MIL-STD 1535A(USAF). The purpose of the standard is to establish the procedures for an effective quality assurance program for government procurements involving subcontracts when MIL-Q-9858A or MIL-I-45208 and this standard are requirements of the prime contract. The prime contractor shall include the applicable portions of these requirements in purchase documents to extend to sub-tier suppliers.<sup>30</sup> The MIL STD is a good tool to use as a baseline in evaluating the contractor's management of subcontracts from a quality viewpoint.

## MIL STD 499-A

Another good avenue of obtaining additional subcontractor communication is in the area of technical reviews. MIL-STD 499, "Systems Engineering Management", requires several technical reviews. One of the reviews required is:

Subcontractor/Vendor Reviews. The contractor shall assure that equipment developed by his subcontractors is reviewed in accordance with the requirements of this standard. These reviews may be accomplished by the contractor or his subcontractors, as desired. The contractor shall assure that actions required as a result of these design reviews are accomplished. Government participation in subcontractor/vendor review shall be as specified by the procuring activity.<sup>31</sup>

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<sup>30</sup> MIL-STD 1535A(USAF) "Supplier Quality Assurance Program Requirements", 1 February 1974.

<sup>31</sup> MIL-STD 499A(USAF), "Systems Engineering Management", 1 May 1974, p. 14.



Discussion during the first part of this chapter has centered on communication channels that are steadily being opened to increase the communications with subcontractors. In some cases the channels have existed before, but little emphasis was placed on making the channel operative. Thus, surprises became the name of the game with considerable expensive "overkill" once the problem was discovered.

### F-16 Contract

The author would now like to examine one of the most recent large Air Force contract awards to examine if the policy discussed throughout this paper is being put to practice. The particular program for analysis is the F-16 Air Combat Fighter. General Dynamics was given the award in January 1975 after a hot prototype competition. The contract under analysis is a Full Scale Development Contract for \$429 million.

A synopsis of the Subcontract Management portion of the contract is as follows:

Subcontract Management: This addresses critical subcontracts, and expresses the desire that terms and conditions, including contract type, negotiated on the prime contract be considered for application on all critical subcontracts. It requires the contractor to apply special management emphasis on the performance as critical subcontractors so as to provide reasonable assurance that contractual requirements will be met. The Government reserves the right to review and approve all critical subcontracts prior to award for specification, economic price adjustment provisions, contract terms and conditions, contract type, proposal evaluation and source selection, cost effectiveness, etc.<sup>32</sup>

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<sup>32</sup> COL Joseph H. Connolly, Air Force Directorate of Procurement Policy, Washington, DC, Personal Interview, March 1975.

In response to the Request for Proposal, and as part of the contract, General Dynamics submitted a Material and Subcontract Management Plan, 16PP126A.<sup>33</sup> While time does not allow a full evaluation of each portion of this program, the author feels that the plan meets the intent of DOD acquisition policy. Figure 3 is a reproduction of the Table of Contents so that the readers may see the areas considered.

An examination of the F-16 contract was made to demonstrate that policy guidance and implementation often precede the formal machinery of ASPR. The F-16 contract is not an isolated example of adherence to the revitalized subcontract management policy.

At the Defense Systems Management School (DSMS) there have been over a dozen Program Managers from the three Services and industry as guest speakers. Every Program Manager has expounded on the importance of keeping subcontractors under control. A deduction from the Program Managers speeches and discussions is that the message is out, even though all the formal machinery is not yet synchronized.

#### Summary

The contents of this chapter can best be summarized by an interview with GEN Stansberry. (GEN Stansberry chaired the 1972 AFSC Subcontract Study.) In response to the question, "If you were a Program Manager today, how would you handle the subcontract area?", he stated the following:

- (1) I'd negotiate with the prime on key subcontractors. I'd want total agreement between the program management office and the contractor on

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<sup>33</sup> General Dynamics, Material and Subcontract Management Plan 16PP126A, Contract F33657-75-C-0310, 16 December 1974.

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the important subs. There would also be a flexible list of important subcontractors where companies could be added or taken off.

(2) I'd form a very strong CAS-ACO team. I'd want as good a team as I could get, possibly dedicated.

(3) I'd want a strong subcontract management clause in the contract.

(4) On critical subcontractors, I'd want to be in the game very early - before it was time to consent.

(5) The program management office, the AFPRO, and the prime contractor should visit the subs. Mark the calendar.

(6) Reports that come into prime - I'd want to see them at the prime level and understand them.

(7) The prime will mirror what the government wants. If he knows you're interested in the subcontract area, he'll also be interested.<sup>34</sup>

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<sup>34</sup> Brigadier General James Stansberry, Deputy to the Dep ASD Procurement (Installations and Logistics), Washington, DC, Personal Interview, April 1975.

## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

The objective of this study was to identify the organizational and communication difficulties that prevail in the management and control of subcontractors. To accomplish this, it has been necessary to understand the subcontract world as it existed in the early 1970s. A review of Air Force emphasis in the subcontract area during the 1972-1975 time frame was accomplished. This culminated in an examination of the current policies that apply to the subcontract portion of the weapon systems acquisition.

Contractors are paid a profit for managing their subcontracts and current regulations do not recognize any direct contractual relationship between the Government and subcontractors. However, it is below the prime contract level where at least half of the program dollars are being spent, and it is the critical subsystems which have repeatedly experienced problems that are very expensive to correct, are surfaced too late to take efficient preventive management action, and are instrumental in reducing overall effectiveness of the weapon systems. The System Program Manager is truly given the task of managing a weapon system and is held responsible for moving a program through the phases of the acquisition cycle within the critical parameters of cost, schedule and performance. Yet, he has had little access to the important work being accomplished outside the prime contractor's plant.

## Conclusions

There are several conclusions that can be drawn from this study:

(1) Subcontracting is big business and is likely to get bigger, thus stretching the communication channels.

(2) Since 1972 there has been considerable high level emphasis placed on Air Force subcontracting and management.

(3) Policy changes, originally stated in the form of guidance, are beginning to appear as ASPR changes and ASPR supplements, opening up communication channels.

(4) Recent Air Force contracts emphasis does reflect the policy guidance that has been issued since 1972. Subcontracting and subcontractors are beginning to receive much needed visibility.

## Recommendations

The conclusions of this study reflect the magnitude of the subcontract communications process and the recent communications improvements that are beginning to appear in the Air Force subcontract arena. In formulating recommendations, these conclusions cannot be considered singly, because in some cases they are related.

(1) The author fully supports the pending changes to Armed Services Procurement Regulation (ASPR) reflected in ASPR Cases 73-36 and 74-111, as well as the pending AFSC ASPR Supplement and the AFCID (AFSC) ASPR Supplements discussed in Chapter III.

Rationale: From a procurement and contracting standpoint, the implementation of policy is best achieved through the ASPR, which specifies

how the Government acquires supplies and services through prime contractors and subcontractors. At the present time, this regulation is not in step with weapon system acquisition policy. If program managers are to be able to manage all aspects of their programs, the legal, contractual link between the Government and the prime contractors must reflect policy through its terms and conditions. Recommendations, when adopted, will encourage appropriate flow down of DOD acquisition policy, that will improve surveillance of critical subcontracts.

(2) The System Program Office must take the lead in formulating a "team" concept that extends to the prime and his subs as well as the government contract administration agencies.

Rationale: Throughout this study, the communications process has been stressed. Examples were given of the difficulties inherent in keeping the communication channels open and difficulties encountered when they were not kept open. The systems program management office has to take a strong leadership position with the prime contractor in the form of a contract and face to face understanding. The prime contractor must display this same relationship with the subcontractors. Likewise, the system program office must exercise strong leadership within the government house. The SPO/AFPROs/CASs must have a strong Memorandum of Agreement and an understanding of the effort that is required. To keep these communication channels operating is going to require dedication by all affected parties. Alternatives to not having a strong team approach are simply not acceptable.



## APPENDIX A

### SUBCONTRACT MANAGEMENT (1972 SEP)

(a) Unless otherwise provided within this contract, the contractor shall be responsible for selecting subcontractors and effectively managing the subcontracts required in the performance of work hereunder. The contractor shall apply special management emphasis on the performance of critical subcontractors so as to provide reasonable assurance that contractual requirements will be met. In discharging this responsibility, the contractor shall establish, maintain and use in the performance of this contract a subcontract management system that conforms to the minimum criteria set forth below. Specifically, the contractor shall:

(i) Prior to the award of the subcontracts, identify all subcontractors who are critical to the successful performance of this contract (i.e., where performance significantly impacts the price or technical requirements or delivery schedule) and notify the contracting officer of this identification in writing, indicating the areas and degree of risk involved. For subcontracts that require advance notification pursuant to the Subcontracts clause of this contract, identification of the critical subcontractor shall be included in such notice. The contractor will include additional subcontractors identified as critical by the contracting officer. Subcontractors may be dropped with the concurrence of the contracting officer from the special emphasis category when they are no longer viewed as critical.

(ii) Require the critical subcontractors to identify at regular time intervals potential technical, cost (when appropriate) and schedule problems and to propose solutions for their resolution. This would include devising work around solutions for risks which become unacceptable. The contractor shall promptly notify the contracting officer of the problems and proposed solutions.

(iii) Insure that each subcontract contains all applicable specifications, special requirements and clauses needed to carry out the requirements of the prime contract.

(iv) Select a contract type appropriate to the risks involved in the performance. Cost type contracts shall be preferred type when substantial development risk is identified.

(v) Consistent with obtaining reasonable competition, plan solicitation and evaluation of subcontractor proposals so as to minimize expense.

(vi) Wherever feasible, encourage subcontractors to submit alternate proposals, e.g., use of off the shelf hardware to meet a contractual requirement in lieu of new development.

(vii) Perform advance procurement planning for each critical subcontract. Respond to reasonable requests of the contracting officer, in writing, for information on procurement planning prior to release of the solicitation.

(viii) Provide prompt notification to the contracting officer when a problem that is likely to have an adverse impact on technical, cost or schedule develops on a critical subcontract.

(ix) Within the contractor's responsibility for the technical performance of subcontracts, provide technical assistance to critical subcontractors for problem solving when required.

(x) Establish a requirement for program reviews with critical subcontractors and periodically invite authorized representatives of the contracting officer to attend these reviews. The contractor shall also invite authorized representatives of the contracting officer to attend design reviews and problem solving meetings as an observer.

(xi) Include a provision in all subcontracts authorizing the contracting officer or his representative to visit the subcontract facilities (with the concurrence of the contractor) to review progress, discuss problems/failures and witness testing pertaining to the requirements of the subcontract.

(xii) Notify subcontractors and secure their agreement to provide adequate information in response to reasonable requests of the contracting officer or his authorized representative on subcontract performance as required.

(xiii) Submit status information for critical subcontractors in program progress reporting that is specified in other provisions of this contract.

(b) The contractor's management of the subcontract effort shall be continually reviewed by the contracting officer. Government participation in surveillance of the performance of critical subcontractors does not relieve the contractor of any of his basic responsibility to manage the subcontracts effectively and efficiently and this surveillance is not intended to establish privity of contract between the Government and such subcontracts.

## APPENDIX B

### SUGGESTED EVALUATION QUESTIONS

The following are typical of the questions which must be discussed during the critical evaluation described in AFSC ASPR Sup 23-5005. This list shall be expanded, modified, or contracted to suit the needs of the individual acquisition.

- (a) Do critical subcontracts receive special management emphasis?
- (b) What are the lines of authority and communication from the prime contractor's program manager to the subcontractor. Are they adequate?
- (c) Does the prime contractor conduct regular program reviews with critical/high-risk subcontractors? How is the Government informed? Are Government observers invited?
- (d) How often do the prime contractor's engineering, manufacturing, and material management personnel visit critical/high-risk subcontractors? Are Government observers invited?
- (e) What is the scope of reviews and approvals required by the prime contractor over a critical/high-risk subcontract's design and manufacturing drawings and processes? Is the review and approval process complied with? Is it adequate?
- (f) Are problems at the subcontract level promptly reported to the prime contractor? To the Air Force purchasing office?
- (g) Are the interfaces between the prime contractor's program manager, subcontract administrator, engineering, quality assurance,

and manufacturing functions and the subcontractor's counterpart functions adequate to help predict potential problems?

(h) Does the prime contractor perform advance procurement planning for critical/high-risk subcontracts? What is the quality of the planning?

(i) What arrangements does the prime contractor AFPRO plan to make with the critical/high-risk subcontractor's cognizant contract administration office through supporting contract administration delegations (see ASPR 20-704).

(j) Are subcontract terms and conditions, including type of contract, appropriate to the risks in the performance?

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